

TRENGGANU.

**Annual Medical and Sanitary Report
For the Year 1936.**



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P. PERHENTIAN BESAR

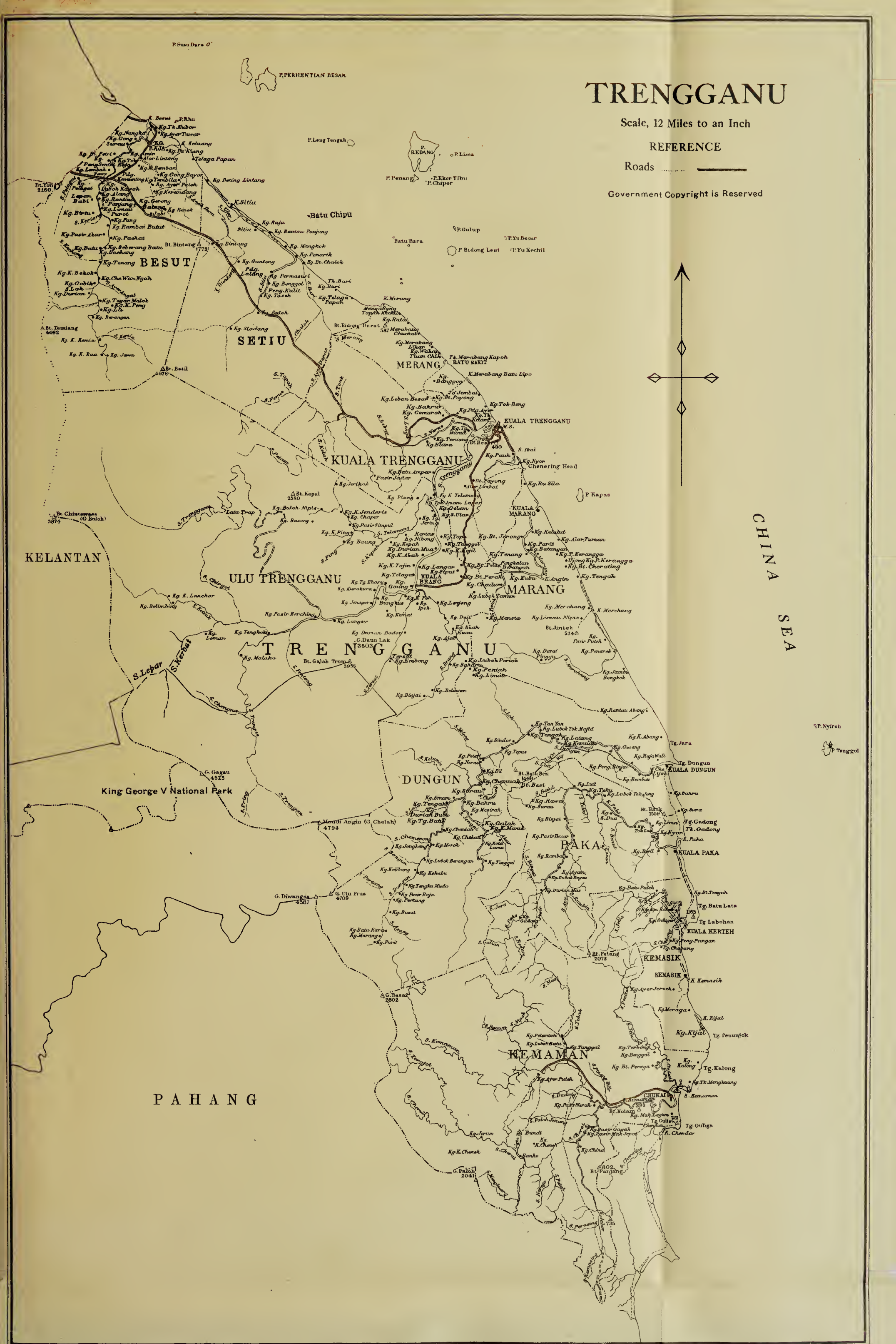
TRENGGANU

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ANNUAL MEDICAL AND SANITARY REPORT
FOR THE YEAR 1936.

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1. ADMINISTRATION.

(A) Staff.

Dr. G. I. H. Braine, who is an officer seconded from the Malayan Medical Department, remained in charge of the Medical Department throughout the year.

Dr. Ten Yoon Fong, L. M. S. officiated as Assistant Medical Officer, Kuala Trengganu.

On 18. 5. 1936, Dr. Raman Peruvanam Seshadri, L. M. S. was appointed Assistant Medical Officer, Kemaman while Dr. Wong Boon Pin, L. M. S. was appointed Assistant Medical Officer, Dungun. They are both graduates of the Singapore Medical College. The strength of the staff at the end of the year was as follows:—

Medical Officer	..	..	.	1	
Assistant Medical Officers	..	..	..	3	
Male Dressers	..	..	..	26	(one special grade, one grade I, eight grade II, nine grade III and seven probationers)
Nurse	..	..	..	1	(grade III)
Midwives	..	..	..	5	
Vaccinators	..	..	..	5	
Sanitary inspectors	..	..	..	2	
Clerks	..	..	..	3	
Storekeepers	..	..	..	2	
Menials	..	..	..	34	

This represents an increase over the staff of the previous year of 2 assistant medical officers, 5 dressers, 1 nurse, 2 midwives, 1 qualified sanitary inspector and 4 menials.

Examinations for dressers and nurses are held at Kuala Trengganu. There were six candidates in 1936 and five passed.

The distribution of the staff, appointments, promotions and the results of the examinations are given in an appendix (A) to this report.

(B) Legislation.

A Deleterious Drugs Enactment has been prepared but has not yet been translated into Malay.

A new Town Board Enactment has been prepared but has not yet come into force.

Peratoran No. 7 of A. H. 1354 (Rules under the Labour Enactment No. 8 of A. H. 1352) prescribed a payment of forty cents per day for the maintenance and treatment of labourers in Government hospitals except for prenatal and maternity cases which are to be treated free of charge. Certain health returns are to be sent to the Medical Officer while employers are to keep suitable books and registers in their hospitals.

Ishtihar (Proclamation) No. 23 of 1355 laid down that people suffering from yaws were to be sent to the dispensaries for treatment.

(C) Finance.

The Estimates for 1936 and the actual expenditure was as follows:—

	Estimated Expenditure	Actual Expenditure
Personal emoluments	\$63,866.00	\$57,811.50
Annually recurrent	39,266.00	33,673.58
Special votes	1,690.00	1,443.88
	<u>\$104,822.00</u>	<u>\$92,928.96</u>

(N.B.—\$1.00 = two shillings and fourpence).

It should be noted that provision had been made for the opening of two small hospitals but the work on these commenced only at the end of the year.

The estimates for 1937 provide for an expenditure of \$121,718.00.

The revenue received by the Medical Department was as follows:—

Hospital charges	..	..	..	..	..	\$940.81
Sale of medicine	..	..	..	..	..	814.65
Licences to druggists and dentists	..	..	..	..	..	110.00
Registrar, Births and Deaths	..	..	..	..	..	45.50
Miscellaneous	..	..	..	..	..	18.50
Total Revenue						\$1,929.46

The following table compares the financial position with that of previous years:—

Year.	Revenue from Medical Department.	Revenue of State.	Expenditure of Medical Department.	Expenditure of State.	Percentage of Medical to State Expenditure.
1932	\$ 446.35	\$ 986,901.00	\$61,623.89	\$1,095,584.00	5.63%
1933	517.15	1,165,578.00	56,465.76	1,060,306.00	5.25%
1934	764.05	1,699,319.12	59,380.93	1,405,157.17	4.23%
1935	1,693.68	2,196,949.07	69,601.05	2,038,841.49	3.41%
1936	1,929.46	2,431,519.52	92,928.96	1,911,730.81	4.86%

N.B.—\$577,090.00 of the State expenditure in 1935 and \$233,145.60 in 1936 was used for the payment of principal and interest on loans made by the Government of the Straits Settlements.

(D) Buildings.

Kuala Trengganu Hospital.—Work on the new ward for male paying patients and officials was nearly completed by the end of the year. Two houses were built for senior dressers.

The necessity for postponing the work on small hospitals for Chukai (Kemaman) and Kuala Dungun is greatly to be regretted but work was commenced towards the end of the year. The hospital at Kemaman is to comprise a building for administration with dispensary and operating room, a ward each for males and females, kitchen, mortuary, dhobi-house and houses for the Assistant Medical Officer, the Dresser-in-charge and the midwife. There will be 35 beds. The hospital at Kuala Dungun is being built beside the present dispensary and will consist of one ward of 20 beds with kitchen and dhobi-house and quarters for the midwife and two attendants.

A few minor works and repairs were completed.

II.—PUBLIC HEALTH.

(A) Population.

The population at the 1921 census was 153,765 while at the 1931 census it was 179,789 of which 92,354 were males and 87,435 were females. It comprised:—

Malaysians	..	..	..	..	..	..	164,564
Chinese	..	..	..	..	..	..	13,254
Indians	..	..	..	..	..	..	1,371
Europeans	..	..	..	..	..	..	35
Eurasians	..	..	..	..	..	..	15
Others	..	..	..	..	..	..	550

The mid-year population for 1936 calculated by the geometrical method is 195,170 and the rates for births and deaths are calculated on this basis. This method of calculation is suitable for Trengganu as there is little change in the population from immigration and emigration and in any case the available statistics for these are incomplete.

(B) Births.

There were 7,105 (7,055)* live births registered during the year of which 3,725 (3,587) were males and 3,380 (3,468) were females; the ratio of male to female births was thus 1,102 (1034) per 1,000 females born. The live birth-rate was 36.51 (36.72) per mille. The number of still births recorded was 250 (209) giving a rate of 34 (29) still births per 1,000 total births.

The following table shows the births according to race:—

	Malays.	Chinese.	Indians.	Europeans.	Eurasians.	Others.	Total.
Males ..	3,445	250	13	0	0	17	3,725
Females ..	3,141	198	17	0	0	24	3,380
Total ..	6,586	448	30	0	0	41	7,105

(C) Deaths.

The number of deaths registered was 4,683 (4,619) giving a rate of 23.99 (24.04) per mille; of these 2,554 (2,515) were males and 2,129 (2,104) were females. The highest number of deaths in any one month was 500 (in January) and the lowest 332 (in February).

A table showing the deaths according to sex, race and age-group is given in appendix (B). Deaths of children under five years of age numbered 2,039 (2,109) or 43.54% (45.65) of the total deaths.

Causes of Death.—The main causes of deaths, as reported, during the last five years have been:—

	1932	1933	1934	1935	1936
Unspecified fever and malaria (v. i) ..	2,814	2,061	2,529	2,557	2,661
Convulsions	778	786	1,031	996	1,095
Diseases of the bowels	225	154	273	264	172
Beri-beri	76	64	68	76	61
Respiratory diseases	48	45	134	143	140
Maternal mortality	108	56	51	77	64
Old age	287	214	308	238	217
Accidents	96	70	63	50	66
Other causes	368	169	133	218	197
Total ..	4,800	3,619	4,590	4,619	4,683

A closer analysis of the causes of death would be useless for the registrars are persons possessed of little or no medical knowledge and the number of deaths certified by qualified medical practitioners amounted to rather less than 3%. Sometimes the term given allows the Registrar to make an accurate diagnosis such as "sakit lembek" (beri-beri) "sakit beranak" (death during or after child-birth), "cherah perut" (diarrhoea), "buang ayer darah" (dysentery) and so on. Usually the presenting symptom is recorded as the cause of death and an approximate diagnosis is possible such as "senak perut" (abdominal colic) or "batok" (cough); on the other hand, the term given may defy diagnosis such as "badi" (ghostly influences—see the Trengganu Medical and Sanitary Report for 1935, page 3—this was recorded 38 times) and "sebak" (oppression of the chest) which might equally well be general peritonitis, heart disease, pneumonia, etc.

Of the 2,661 cases of unspecified fever and malaria recorded above, 136 were due to malaria and the others were due to undetermined fevers; of the latter, 2,356 or rather more than half the total number of deaths were due to "deman panas" (hot fever). It is generally assumed in Malaya that this term probably refers to malaria but this is by no means the case in Trengganu as the writer has noticed that deaths from this cause are frequent in places where experience has shown that cases of malaria are exceedingly rare.

*The second number, in brackets, refers throughout the report to the figures of the preceding year, which are given for comparison.

Noxious Animals.—Four (5) persons were killed by tigers; two of them were killed by the same tiger which they had wounded on the previous day.

Road Accidents.—Two (5) persons were killed in motor-car accidents.

Maternal Mortality.—Sixty-four (77) women died as the result of child-birth giving a rate of 9.01 (10.91) per thousand live births; the rate for Malays was 8.96 per mille. As registration in Trengganu is now fairly reliable and as it may safely be assumed that these figures for maternal mortality are correct, the rates are interesting as they give a good idea of the efficacy of native midwifery. (Only 248 of the 7,105 births were attended by qualified midwives). A concession is made, however, to Western methods in that a large proportion of these women or their relatives come to the dispensaries asking for medicine, ergot for the mother and antiseptic dusting powder for the cord of the child having great reputations.

(D) Infantile Mortality.

The number of deaths of children under the age of one year was 1,514 (1,465) or 32.35% (31.72) of the total number of deaths of which 872 (803) were males and 642 (662) were females. The infantile mortality rate was 213.09 (207.65) per mille.

The rates according to race are as follows:—

Malays	..	..	..	..	..	..	216.82
Chinese	..	..	..	..	..	..	167.41
Indians	..	..	..	..	..	..	133.33
Others	..	..	..	..	..	..	170.73

The infantile mortality rate is heavy but the high percentage of Malays in the population (about 91) accounts for this. The infantile mortality rate for Malays is actually less than that for Malays in Singapore and Malacca in 1935 as in each of these settlements it was approximately 225 per mille.

There is little doubt that many of these infants are the victims of ill-feeding and it is the rule to feed them with rice and bananas when they are two days old.

(E) Registration of Births and Deaths.

The Medical Officer is the Registrar while he has a clerk who acts as Assistant Registrar. There are Deputy Registrars in 41 places of which 28 are police stations, 3 are customs offices and 10 are the offices of pengulus (district head-men).

It is considered that registration is now fairly complete but the police are always on the watch for lateness or failure to report. During 1936, there were 7 prosecutions and 7 convictions with regard to births and 7 prosecutions and 6 convictions with regard to deaths (the other case is pending).

The following table shows the number of births, deaths and infantile deaths with their rates since the inception of registration in Trengganu. The mid-year population has been calculated from the census figures of 1921 and 1931 by the geometrical method.

Year.	Mid-year Population.	Number of Births.	Birth-rate	Number of Deaths.	Death-rate.	Number of Infant Deaths.	Infantile Mortality rate.
1927	169,550	3,940	23.24	4,980	29.96	1,403	356.09
1928	172,222	4,555	26.45	4,847	28.14	1,619	355.43
1929	174,936	4,841	27.67	4,763	27.23	1,643	359.39
1930	177,693	6,189	34.83	4,591	25.84	1,573	254.14
1931	180,493	6,489	35.05	4,323	23.05	1,469	226.38
1932	183,338	6,836	37.29	4,809	26.24	1,643	240.35
1933	186,227	7,078	38.01	3,619	19.43	1,159	163.75
1934	189,161	6,330	33.46	4,590	24.27	1,401	221.33
1935	192,142	7,055	36.72	4,619	24.04	1,465	207.65
1936	195,170	7,105	36.51	4,683	23.99	1,514	213.09

III.—HYGIENE AND SANITATION.

(A) Special Diseases.

The most reliable information as to the incidence of disease in Trengganu is to be obtained from the statistics of patients treated by the medical department. As has been pointed out above, the reports of deaths are more trustworthy as to the fact than as to the cause.

(i).—Malaria.

The incidence varies widely in different parts of Trengganu. The coast-line, where about two thirds of the population resides, is fairly free from it as is shown by the spleen rates ascertained at school inspection. It is fortunate that the two largest towns, Kuala Trengganu and Chukai, Kemaman are situated on or near the coast; the spleen rates here were 0.31% and 0.36% respectively. There are some malarious villages on the coast, however, such as Kretay where the spleen rate is usually found to be about 20%; in such places the flat, sandy plain is broken by hills. The further one goes inland the higher becomes the incidence of the disease. In the upper reaches of the various rivers in the north of Trengganu, malaria is extremely prevalent and in the most distant villages practically all the children with the exception of some very young babies have enlarged spleens; on the other hand, the incidence in the corresponding districts in the south of Trengganu appears to be lower and in the villages on a number of rivers visited by the Medical Officer the average was about 50%. Fortunately the population in these districts is very sparse as the inhabitants live mainly by shifting cultivation which is prohibitive of large villages. The islands lying off the coast of Trengganu are highly malarious especially Pulau Perhentian where a spleen rate of 93.75% was noted; anopheline mosquitos were found in seepages on the hill-side. The population on these islands is small and probably does not amount to 800 people.

There is always a certain amount of malaria on the mines and estates but a slight improvement was noted as compared with last year (in cases where figures for both years were available); there were 19 deaths from this cause in an average monthly population of 5,516 persons as compared with 20 in a population of 4,952 in 1935.

The following figures show that there was little or no increase of malaria during the year:—

	1935	1936
Number of deaths reported as being due to malaria ..	194	136
Number of deaths reported as being due to fever unspecified ..	2,363	2,525
Number of deaths reported as being due to convulsions ..	996	1,095
Total death rate per mille	24.00	23.99
Percentage of out-patients treated by Government dressers for malaria	14.22%	13.43%
Percentage of in-patients treated at Government hospitals suffering from malaria as the principal disease ..	25.93%	15.82%
Percentage of Malays admitted into Government hospitals suffering from malaria as the principal disease ..	9.87%	5.83%
Spleen rate of school children	2.38%	2.78%
Deaths from malaria per mille on six of the biggest mines and estates	4.04	3.44

(ii).—Plague.

There was no case of plague.

(iii).—Cholera.

There was no case of cholera.

(iv).—Smallpox.

There was no case of smallpox.

Primary vaccinations numbered 11,620 and revaccinations 1,154, a total of 12,774 as compared with 15,711 in 1935 when, however, there were two small out-breaks of smallpox.

The details are as follows:—

	Primary Vaccinations	Revaccinations	Total
Vaccinator Besut	1,621	322	1,943
Vaccinator Kuala Trengganu	3,512	98	3,610
Vaccinator Kuala Brang (a new appointment)	2,891	178	3,069
Vaccinator Dungun	1,369	331	1,700
Vaccinator Kemaman	1,845	225	2,070
Dispensaries	123	0	123
Travelling Dressers	259	0	259
Total ..	11,620	1,154	12,774

Vaccination is compulsory and all infants must be vaccinated within one year after birth. No difficulty is experienced by the vaccinators in performing their work and only one case has been brought to the court within the last five years. The Malays have great faith in this as they remember only too well what a scourge the disease used to be as the scars on the faces of many of them testify.

(v).—The Typhus Group of Fevers.

No case of tsutsugamushi fever has yet been diagnosed in Trengganu. There were four cases of tropical typhus treated with one death as compared with three and one death in 1935. The three cases discovered in 1935 were cases of "scrub" typhus and the disease was contracted in the Dungun district. In 1936, two were cases of "scrub" typhus, the patients coming from Dungun and Kuala Trengganu while the other two were cases of "shop" typhus and in both cases the disease was contracted at Kuala Trengganu.

(vi).—Bowel Diseases.

The number of deaths reported to have been due to diseases of the bowel fell from 264 in 1935 to 172.

The low incidence of dysentery and enteric fever is remarkable in view of the low hygienic standard that obtains in regard to conservancy and water supplies. Doubtless the filtering action of the sandy soil on the coast plays a great part while the people living on the banks of the rivers are too scattered to pollute the rivers to any serious extent. There has been no severe out-break of dysentery since the ones at Manir in 1931 when there were 61 deaths and at Batu Rakit in 1932 when there were 57 deaths; on both of these occasions, the out-break had been in progress for some time before the Medical Department was informed and this is not likely to happen again now.

Forty-one (26) cases were treated in the Hospital of which 15 (6) were amoebic and there were 3 (4) deaths. One hundred and sixty-nine (147) were treated as out-patients of which 64 (48) were amoebic; 53 of the latter cases came from Dungun. Sporadic cases of amoebic dysentery are reported from the mines but there was an increase this year at the mine of the Nippon Mining Company, Dungun where there were 39 cases with 2 deaths.

Enteric Fever.—Only 12 (12) cases were reported.

Helminthic infections.—These are very prevalent and 66.78% (84.30) of all specimens of stool examined at the hospital laboratory had some kind of helminthic infection which was usually multiple (microscopic film method). The parasites encountered were:—Ankylostoma—22.14%, ascaris—83.26%, and trichuris 70.69%; strongyloids and lamblia intestinalis occurred in about 1%. Only 2 cases of oxyuris vermicularis and one case of taenia solium were seen; the latter patient had recently come from China. The number of patients treated by the medical department was 18,437 (15,484).

(vii).—Cerebro-Spinal Meningitis.

There was no case of cerebro-meningitis.

(viii).—Tuberculosis.

One hundred and forty (143) persons were reported to have died of respiratory disease and 51 (47) of these deaths were said to have been due to pulmonary tuberculosis.

There is no overcrowding in Trengganu, at least among the Malays, for the 1931 census showed that the house density in Trengganu was only 4.3. Most of the cases that come to the Government Hospital are Chinese.

(ix).—Beri-Beri.

Most of these cases occur towards the end of the north-east monsoon. The incidence is perhaps greater among the Chinese than among the Malays while it is rare in the case of Indians. It is usually noted in women after confinement while in the case of males it often becomes manifest during an attack of malaria. The disease is common on the coast where the population depends on fishing for a livelihood and buys the polished rice which it eats but it is rare in the interior where the home-grown, unpolished rice is the staple diet. It is also common on the mines which are usually situated in inaccessible parts of the State while the coolies are mainly Chinese.

One thousand four hundred and twelve (1,176) cases were treated by the Medical Department while 71 (76) deaths were reported.

X.—Yaws.

The number of cases treated by the Department during the last five years have been:—

1932	..	..	..	3,434
1933	..	..	..	4,798
1934	..	...	..	4,400
1935	..	..	..	4,334
1936	..	..	..	3,110

Thus the number of cases seen is declining and this in spite of the fact that the number of new patients treated for all causes by the Department has more than doubled since 1932. Although the late manifestations of this disease are still prevalent it can be asserted with confidence that the early stages are disappearing. Out of 2,309 school children examined, signs of yaws were noted in 226 of which all but 11 were tertiary (late) lesions of the hands and feet while no case in the primary stage was seen and only four in the secondary stage ("puru"). It is now unusual to see any of the young children in the villages suffering from the early stages although these cases were very common a few years ago.

The number of injections given for this disease was 3,345 (3,164) of which 1,684 (1,130) were second and subsequent ones. A limited number received "stovarsol." A proclamation was issued during the year ordering all cases of yaws to undergo treatment at the dispensaries; at present, this order is merely being used as a threat in stubborn cases. Although the writer attributes this unwillingness to the fact that formerly injections of sodium-bismuth-tartrate were used which invariably caused a local and general reaction—sometimes severe—some Malays with whom the matter has been discussed attribute it to the sudden death of a patient in the Kamaman Dispensary many years ago following an injection of this drug. This may be so for as a rule the Malays are quick to appreciate a drug which affords speedy and spectacular results. A little persuasion, however, usually works wonders and it is rare for a case in hospital to refuse this method of treatment.

(xi).—Other Infectious Diseases.

Chickenpox.—Small out-breaks occur from time to time all over the State. Fifty-eight (102) cases were reported and there was no death.

Diphtheria.—There was no case of diphtheria.

Influenza.—Four thousand four hundred and three (3,933) cases were treated by the Department.

Measles.—Thirty-nine (69) cases were reported but there was no death.

Mumps.—There were also thirty-nine (2) cases of mumps recorded with no death. Thirty-five of these were in Kuala Trengganu where there was a mild epidemic during November.

Tetanus.—One case was admitted to hospital and he survived; one death due to “kaku mulut” was reported which may have been tetanus.

Whooping-cough.—Ninety-five (25) cases were encountered by the Medical Department and five (2) deaths were reported. There was an out-break at Kampong Mak Lagam near Kemaman in September and there were seventeen cases, the ages of the patients varying from ten months to eight years; there were three deaths. No difficulty was experienced in enforcing isolation.

(B).—General Measures of Sanitation.

Sanitation is not highly organized in Trengganu but steady progress is now being made in the larger towns; lack of staff was the chief difficulty prior to 1936. There are now Town Boards consisting of five or more members at Kuala Trengganu, Kuala Dungun and Chukai, Kemaman: the Medical Officer is a member of the Kuala Trengganu Town Board while an Assistant Medical Officer serves on each of the other boards. Elsewhere, sanitation is controlled by the Malay District Officers with the exception of Besut where the State Commissioner, North of Trengganu is in charge.

There are now two qualified sanitary inspectors in the State who are stationed at Kuala Trengganu and Kuala Dungun.

The staffs employed by the various towns are as follows:—

Kuala Trengganu.—Three inspectors including one building inspector (new post), one overseer, two mandors, three lorry drivers. The average number of coolies employed for lighting lamps, cleaning drains, markets, streets, etc. was 48.

Kemaman Town Board.—One mandor and ten coolies.

Kuala Dungun Town Board.—One mandor and twelve coolies.

Besut.—One mandor and seven coolies.

Use is also made of gangs of prisoners in these places.

The village of Marang employs a mandor and two coolies but there are only 3 other such coolies in the rest of the State.

(i).—Anti-Malaria Measures.

As has been pointed out, the larger towns are free from malaria and anti-malaria measures are most required where such are most difficult to achieve.

A limited amount of oiling is done at Marang in a ravine running through the town. Neglect of this in the past led to a number of out-breaks of malaria in that village.

A number of mosquitos surveys were performed by the sanitary inspectors at Kuala Trengganu and Kuala Dungun but no anophelines were found. Mosquito surveys were also performed by the Medical Officer at the following places:—

Pulau Perhentian—*Anopheles maculatus*, *kawari*, *rossi* and *kochi* were found breeding in seepages and in the pools of small streams on the side of the hills.

Ishihara Sangyo Koshi mine—*A. vagus* was found to be breeding freely in swamps and pools.

Kajang Mine, Kemaman—*A. maculatus* and *vagus* were found principally in felled jungle.

(ii).—Sewage Disposal.

(a) Kuala Trengganu.—A “double-pail” system is carried out by private company; ultimate disposal is by trenching. The work of this company was not satisfactory while only 316 (250) latrines are served in a town of over 14,000 inhabitants. The hospital and some private houses have trenching systems of their own and prisoners serve the gaol, police-barracks, the Government offices, and some of the schools and private houses. This is not a satisfactory state of affairs and the Town Board is to undertake the work in 1937 and to this end a new trenching-ground has been prepared with a drying-shed and store and a washing plant complete with septic plant. Two public latrines each with six buckets were completed during the year.

Kuala Dungun.—A start was made with a conservancy system and all the new shop houses are served. A public latrine with six pails was built.

Chukai.—Practically all the shops and houses within the Town Board area are served by a contractor while there are public latrines.

Elsewhere there are a number of pit-latrines and latrines built over rivers but as a rule there is no proper method of disposal, the fore-shore or river, a clump of vegetation or the space under the house being utilized.

(iii).—Refuse Disposal.

Disposal of refuse is by control tipping in towns and by burning and burying in the villages. Three lorries remove the rubbish in Kuala Trengganu and one at Kemaman while two bullock carts are used at Kuala Dungun. More houses ought to be provided with dust-bins.

About 1,300 cubic feet of rubbish is removed daily at Kuala Trengganu.

(iv).—Water Supplies.

In all the towns and larger villages water is obtained from shallow, and for the most part, unprotected wells while in the up-country districts it is usually obtained from the rivers.

Permission has to be obtained from the Town Boards before a new well can be built and a good site and proper construction are demanded. A number of old insanitary wells were demolished during the year.

(v).—Drainage.

The drainage systems are poor and mostly consist of earth drains but any danger is minimized by the sandy nature of the soil. New concrete drains were constructed at Kuala Dungun beside the new shop-houses and also at Kemaman.

(vi).—House Inspection.

The inspection of houses is regularly performed at Kuala Trengganu and Kuala Dungun by the Sanitary Inspectors and recommendations are made to the Town Boards.

In Kuala Trengganu, 38 houses were inspected by the Medical Officer and recommended for demolition. Similar action was taken in the case of a large group of 87 squalid houses on the river bank at Chukai, Kemaman; this was done and the people transferred to a better site while the area left is to be preserved as an open state. A large number of houses were also demolished at Kuala Dungun in connection with the new town-planning scheme.

(vii).—School Hygiene.

MEDICAL INSPECTION.

All the Government schools in the State, twenty-two in number, and five of the largest private schools were inspected by the Assistant Medical Officers and senior dressers.

All the children underwent a medical examination and were later given the opportunity of treatment. The number examined was 2,309 (2,058) which was 86.12% (81.96) of the number on the roll. 1,294 (1,111) of these pupils were in the schools in Kuala Trengganu.

The proportion of pupils with enlargement of the spleen was 2.78% (2.38), the rate being 0.31% (0.72) at Kuala Trengganu and 5.81% (4.33) in the other schools.

Signs of yaws were noted in 226 or 9.97% of the children; in all but eleven cases these were tertiary lesions of the hands and feet; no case in the primary stage was seen and only four in the secondary stage.

A great number of the pupils showed signs of intestinal worms, the percentage being 78.6 in the case of the schools at Kuala Trengganu. At Kuala Kemaman and Chukai, Kemaman 114 specimens of stool were examined and only two specimens were negative.

Dental caries was noted in 62.19% (49.61). At Kuala Trengganu, dental caries was noted in 62.19% of the children in which the defects were "marked" in 3.96%, "average" in 24.85% and "slight" in 71.19%; pyorrhoea was also noted in 9% of these cases.

Ulcers were noted in 7.28% (5.10), scabies in 4.98% (14.09) and tinea in 3.42% (11.76).

SANITATION.

Reports are sent to Government about sanitary defects. There was overcrowding in two of the schools while there was insufficient seating accommodation in two others.

The new private Chinese school at Kemaman is the best in the State.

(vii).—Labour Conditions.

The Medical Officer pays regular visits to all estates and mines.

MINES.—There are three tin and two iron mines which employ labour on a considerable scale, the average labour force employed monthly being 3,435 (3,327) while the number of dependents numbered 1,297 (1,024). Sixty-five (67) deaths were reported—the death-rate would have been lower but for the fact that 8 persons were killed in a riot. Eight hundred and fifty two cases of malaria were reported with 19 (20) deaths. Owing to the isolated position of these mines, beri-beri is frequent and 204 cases were reported but most of these cases must have been slight as there were only 4 deaths; on the other hand, some of the six deaths reported as being due to myocarditis and heart failure may have been due to this cause. Certain details abstracted from the health reports sent to the Medical Officer every month by these concerns are given in an appendix C to this report.

The Nippon Mining Company, Dungun has a hospital and dispensary while the medical staff consists of two doctors, a dresser, a nurse, a midwife and a dentist who are all Japanese subjects. An Indian sanitary inspector was added to the staff at the request of the Medical Officer while the strength of the sanitary force was increased. Conditions in general improved but, although 13 new lines were added, the housing accommodation is still inadequate, while the management failed to complete their scheme for a better piped water supply. The number of coolies entering the Government Hospital, Kuala Trengganu who claimed to be employees of this mine dropped from 614 in 1935 to 354 in 1936.

All the other concerns employ qualified dressers or doctors. They all increased the number of their sanitary coolies during the year.

Orders were given to the Ishihara Sangyo Koshi to deal with some swampy ground in which *Anopheles vagus* was found to be breeding freely. Conditions improved greatly at the Kajang Mine; bore-hole latrines were constructed and a large area where *Anopheles vagus* and *maculatus* were found to be breeding is now being drained.

ESTATES.—The Kretay Plantations employed an average monthly force of 572 (519) labourers while the dependents averaged 155 (82). In consequence of the larger number of Tamil coolies now employed, a number of new lines were built. A new hospital was built nearer to the labour force.

The Jabor Valley Estates is situated in the extreme south of Trengganu and is over 4,000 acres in extent. It was formed by the purchase of a number of small holdings. The only approach road to the estate is from Kuantan in the State of Pahang. A large South Indian labour force was formed in May without warning being given to the Medical Department. Health conditions were poor and sickness was frequent owing to malaria and other diseases. The management, however, has since made a strong effort to improve conditions.

There is now a good temporary hospital with a first grade dresser and a second grade one while a Chinese medical practitioner pays weekly visits. A trained inspector is being employed who is making a complete mosquito survey of the whole of the Jabor area including adjacent estates. The average number of labourers employed per month was 887 while the dependents numbered 182, a total average population of 1,069 of which 743 were South Indians.

The deaths of 23 persons were reported of whom 14 were labourers. The commonest cause of death was pneumonia (7 cases). Although there were 360 cases of malaria and 737 cases of unknown fevers there was no death recorded from these causes; there were actually 124 cases of malaria and 346 cases of unknown fevers in May but the incidence of these fell towards the end of the year.

(ix).—Housing and Town Planning.

Fairly wide municipal limits have been fixed in all the larger towns. Within these limits, a site plan has to be furnished and the building plan has to be passed by the Town Board. Additions to buildings and renovations have also to be sanctioned by the Town Board. In Kuala Trengganu, the rule is that all plans for permanent buildings and for additions and renovations to buildings of a value of \$500.00 and over have to receive the sanction of the Medical Officer; the Sanitary Inspector inspects all other plans which numbered 136 in 1936. Outside the town areas there are no building regulations. A beginning was made during the year with the extension of municipal control to other and as yet smaller areas which, as communications gradually improve, will probably develop into at least villages of considerable size.

Town Planning.—As far as Kuala Trengganu is concerned the town plan which was approved some years ago has many defects; a committee has been appointed to make another one but so far little progress has been made on account of the delay in completion of the settlement of the ownership of land within town limits.

A great deal of progress has been achieved with regard to the new town at Dungun. In addition to the work of demolition, new shop-houses and private houses, roads and drains have been constructed.

General.—There are no building societies in the State.

There are very few cooly lines as local labour is generally employed. There are a few lines of a poor type belonging to the Public Works Department while there are lines on the larger mines and estates.

There are very few Government Quarters with the exception of those occupied by the European Officials.

(x).—Food in Relation to Health.

All coffee-shops, eating-houses, lodging houses and bakeries have to be licensed and regular inspections are made by officers of the Medical Department and the Town Boards. In Kuala Trengganu, the Medical Officer personally examined all of these premises and as a consequence minor improvements had to be effected in most of them before licences were granted or extended by the Town Board.

Markets.—There are markets of a permanent type in most of the larger towns and villages. Fly-proof devices for keeping meat were installed at Kuala Trengganu and although a new market was built here, the accommodation is still inadequate. A certain amount of bad fish and meat was confiscated at Kuala Trengganu and Kuala Dungun.

Abbatoirs.—A slaughter-house for pigs was completed at Kuala Dungun. A pork market and a slaughter house for pigs were to have been built at Kuala Trengganu but the work had to be postponed as there was some trouble over the selection of suitable sites on religious grounds.

(xi).—Measures taken to spread the knowledge of Hygiene and Sanitation.

The Sanitary Inspectors, Dressers and other officials endeavour, on their periodical visits, to impress upon the people the necessity of keeping their houses and the surrounding land in a clean condition. Otherwise, little else is done. One of the chief difficulties is the illiteracy of the population; less than 20% of the boys of school age go to school while the school-girls number just over 300.

Small health and medical displays were organized at the Agricultural Shows at Kemaman and Besut.

(xii).—Dentists and Druggists.

Compulsory registration is in force. The Medical Officer reduced the number of registered druggists from 15 to 9. Thirty-five dentists have been registered none of whom has proper qualifications, but only 22 of them remain in the State.

Control of Drugs.—The Medical Department controls the import of drugs with the help of the Customs Department. The Customs Department asks officers of the Medical Department for help in identifying drugs and returns of all drugs imported are sent to the Medical Officer for scrutiny. All deleterious drugs are sent first to the Medical Officer for examination before they can be imported.

IV.—PORT HEALTH WORK.

As the out-break of cholera in Siam persisted during the year, the Medical Department continued to examine the passengers and crews of boats from that country before they were allowed to land. There is a large number of junks trading between Kuala Trengganu and Siam and 640 (320) of these boats were examined during the year. There was one successful prosecution for breach of this regulation.

V.—MATERNITY AND CHILD WELFARE WORK.

(A).—Maternity Work.

There are now five qualified midwives in the service of the Department as against three in 1935 while the new nurse is also a qualified midwife. The only other qualified midwife in actual practice in the State is employed by the Nippon Mining Company, Dungun.

Kuala Trengganu Hospital.—Sixty-four (59) confinements were conducted and there were no (2) maternal deaths; nine (7) of these women were Malays. In addition, three (1) cases of abortion were successfully treated. There was one case of retained placenta, one case of twins, three breech cases and two cases requiring the application of forceps of which one was a face case.

Cases Treated at Home.—One hundred and fifty nine (102) mothers were delivered in their homes.

Maternity and Welfare Clinic, Kuala Trengganu.—The midwife here conducted 92 (89) cases as well as attending to 4 (5) cases of miscarriage. Of these 92 patients, 42 (47) were Malays and 60 (40) were Chinese. There was no maternal death. Eighty-four (58) women attended for ante-natal advice and treatment.

Kemaman.—The midwife here conducted 48 cases as against 13 during the last three months of 1935. Although the midwife is Chinese, it is to be regretted that all but one of the women delivered were Chinese. One case of difficult labour was referred to a private doctor and both mother and child died. There were two cases of transverse lie, two cases of retained placenta and one case of difficult labour in a primipara; delivery in the latter case was effected by forceps. The Assistant Medical Officer successfully treated a case of acute complete inversion of the uterus which had been caused by an unqualified midwife pulling on the cord to remove the placenta.

Besut.—A Malay midwife was sent to Besut for the last seven months of the year; the result was very disappointing as only 14 cases were treated including 13 Malays. There was one case of breech presentation and there was no maternal death. Twenty-three women attended for ante-natal care and treatment.

Kuala Dungun.—A Chinese midwife was sent here for two months and she delivered five Chinese women with success.

(B).—Infant and Child Welfare Services.

It is hoped with the help of the four midwives in the districts to build up gradually a child welfare service. After delivery, it is customary for them to pay ten visits to the mother and child. When not out on their rounds, the midwives are expected to assist in the treatment of women and children in the dispensaries.

A maternity and child welfare clinic is run in conjunction with the Kuala Trengganu Town Dispensary. The number of children treated fell but the number of mothers attending for ante-natal treatment showed a rise:—

	<u>1935</u>	<u>1936</u>
Numbers of infants treated under one year of age ..	205	169
Number of children treated between the ages of 1 & 12 ..	1,631	1,243
Ante-natal visits	58	84

VI.—HOSPITALS AND DISPENSARIES.

(A).—Hospital In-Patients.

There is a Government hospital at Kuala Trengganu which has nine wards with accommodation for 156 patients. Two of the wards are for females, one of which is a maternity ward comprising a labour theatre, an eight-bedded ward and two single rooms for paying patients. The remaining wards are for male patients, one of which is reserved for lepers and one for cases of tuberculosis. The other buildings in the hospital include a store and an administrative block with dispensary, laboratory and operating-theatre attached.

No other provision is made for in-patients in Trengganu with the exception of a small ward for sick male prisoners in the gaol.

The accommodation provided at the hospital, with the exception of two single rooms in the maternity ward, is what would be described as third class elsewhere in Malaya but this state of affairs will be improved when the new ward for officers is opened. Paying patients are charged thirty cents a day but a charge of one dollar is made for the single rooms in the maternity ward.

The following is a summary of the work performed at the dispensary during the last five years:—

	1932	1933	1934	1935	1936
Total number of admissions	1,640	1,710	1,775	2,314	2,418
Total number of Malays admitted ..	806	997	1,051	1,074	1,082
Total number of females admitted ..	249	303	304	334	336
Total number of Malays females admitted	171	241	233	250	236
Total number of deaths	63	43	62	76	81
Number of deaths per 100 admissions	3.84	2.51	3.49	3.28	3.35
Number of deaths excluding cases dying within 48 hours of admission	—	33	56	60	72
Number of deaths per 100 admissions excluding cases dying within 48 hours of admissions	—	1.94	3.19	2.61	2.97
Number of cases of child-birth conducted in the maternity ward	34	44	44	59	64
Number of operations performed ..	100	101	100	149	219
Number of deaths after operation ..	0	1	3	2	4
Number of cases treated by dental extraction	59	90	164	176	230

The average daily number of in-patients was 127. The highest number of in-patients was 158 while the lowest was 93. The number of in-patients fell off towards the end of the year; this was partly due to the bad weather as it interfered with the running of the coastal steamers, two of which were wrecked. (Only 602 out of 2,418 came from the Kuala Trengganu district).

The return of diseases and deaths of in-patients is given in Appendix D.

A list of the operations performed is given in Appendix E.

The average cost of feeding the patients was 10.92 (10.47) cents per patient per day.

The following figures relate to the prevailing diseases treated:—

Disease.	Admissions.	Deaths.	Mortality.
Malaria Acute (parasites found in blood by microscope) ..	233	5	2.15
„ Acute (clinical diagnosis) ..	149	0	0
„ Chronic	7	1	14.28
Influenza	105	0	0
CHEST AFFECTIONS:—			
Bronchitis	44	0	0
Pneumonia & broncho-pneumonia ..	9	4	44.44
Pulmonary tuberculosis	49	21	42.86
INTESTINAL AFFECTIONS:—			
Dysentery	34	3	8.82
Diarrhoea & enteritis	19	0	0
OTHER AFFECTIONS:—			
Helminthic diseases	260	3	1.15
Beri-beri	135	9	6.67
Anaemia	16	0	0
Yaws	257	0	0
SURGICAL CONDITIONS:—			
Chronic ulcers	142	0	0
Wounds, fractures, etc.	153	3	1.96
Abscesses, carbuncles, boils, etc. ..	64	0	0
VENEREAL DISEASES:—			
Syphilis, late manifestations	14	1	7.14
Syphilis, hereditary	1	0	0
Syphilis, other	21	0	0
Other venereal diseases	168	0	0

NOTES ON PREVAILING DISEASES AMONG HOSPITAL PATIENTS.

(i) Malaria.—There were only 389 patients admitted suffering from malaria as against 614 in 1935. The decrease is largely due to the fact that only 169 of the coolies employed by the Nippon Mining Company's coolies were admitted suffering from this disease as against 303 in 1935.

The predominating type in the cases confirmed by microscopical identification was subtertian while it was benign tertian in the previous year:—

	<u>1935</u>	<u>1936</u>
Subtertian infection	120	110
Benign tertian infection	168	68
Quartan infection	29	24
Mixed infection	23	31

No case of blackwater fever was recorded.

(ii) Venereal Disease.—Syphilis is rarely seen in the case of the local Malays and is uncommon in Trengganu except at Kuala Dungun where there is a considerable influx of outsiders. There were 35 (30) admissions. Of the 21 cases in the primary and secondary—and therefore infective—stages, 14 came from Dungun.

There were 126 (127) admissions for gonorrhoea.

The use of "Dmelcos" vaccine has greatly improved the treatment of soft sore.

The following table shows the cases arranged according to race and district:—

RACE.

	Total	Chinese	Malays	Indians	DISTRICT	
					Kuala Trengganu	Dungun District
Number of patients admitted	2,418	1,116	1,082	212	602	646
Number of patients admitted suffering from syphilis	35	20	4	11	5	18
Number of patients admitted suffering from gonorrhoea	126	27	61	38	62	28
Number of patients admitted suffering from other venereal diseases mainly soft sore	41	20	14	7	17	13

(iii) Pulmonary Tuberculosis.—There were 49 (41) admissions with 21 (16) deaths, giving a case mortality of 42.68%. Of the total deaths in the hospital, 25.9% were due to this cause. As usual, the patients were nearly all middle-aged and old men who were unable to work.

(iv) Dysentery.—The number of admissions recorded as due to dysentery was 34 (25). There were 15 cases of amoebic dysentery with no death, one case of bacillary dysentery with no death and 18 cases with 3 deaths in which the cause was undefined.

(v) Beri-beri.—There were 135 (107) cases with 9 (11) deaths. Sixteen of these cases had marked cardiac symptoms and all the deaths were in this group; at the end of the year, a supply of concentrated vitamin B1 for injection was obtained for treating these cases but no suitable case was available.

(vi) Tropical Typhus.—There were four admissions for tropical typhus; there were two cases of "shop" typhus both from Kuala Trengganu and one from Dungun. One of the cases of "shop" typhus died. This disease was first definitely diagnosed in Trengganu last year when three patients were admitted from the Dungun district suffering from "scrub" typhus. All these cases are confirmed by serological examination. No case of Japanese River Fever has yet been seen in Trengganu.

(B).—Out-Patients.

There are permanent Government Dispensaries, each in the charge of an experienced dresser, at the following places:—

Kampong Raja, Besut.

Kampong Buloh (belonging to the Public Works Department).

Kuala Trengganu Town.

General Hospital, Kuala Trengganu.

Kuala Brang.

Kuala Dungun.

Chukai, Kemaman.

There are in addition small dispensaries at Setiu and Kemasek each in the charge of a travelling dresser while travelling dressers are also attached to the General Hospital, Kuala Trengganu and to the dispensaries at Kampong Raja, Kuala Dungun and Chukai, Kemaman.

There is thus a chain of dispensaries along the coast while the travelling dressers and the dispensaries at Kuala Brang and Kampong Buloh supply the needs of the population in the interior. Most of the people of the interior live along the banks of the numerous rivers which intersect the State and eke out of a livelihood by shifting cultivation and the sale of forest products. There are no roads along these rivers with the exception of one to Kuala Brang and so a visit up one of these rivers entails a journey by perahu lasting about a week or more. A great deal depends upon the weather and travelling is greatly restricted during the period of the north-east monsoon which lasts approximately from November until March. Conditions during 1936 were particularly adverse as the rainfall measured at the dispensaries showed an increase varying from 40 to 70 inches over the figures for 1935.

The total number of new cases treated by these dispensaries and travelling dressers was 113,059 (102,155) while the total number of attendances was 141,440 (126,882). Of these new cases, 55,345 (47,530) were treated by dressers on visits to outlying villages away from headquarters. The total number of nights spent away from headquarters by these dressers was 439 (352).

In addition to performing vaccinations, the five vaccinators distribute medicine to the villagers during their visits; the number of new cases so treated was 16,992 (11,586).

Eleven rural police station and four customs stations, which are situated in places where there are no dispensaries, are supplied with small stocks of simple drugs such as quinine, antiseptic lotions and ointments, vermifuges, etc. for distribution and 1,047 treatments were given.

The following table shows the numbers treated:—

	1935		1936	
	New Cases	Total Attendances	New Cases	Total Attendances
Cases treated by dispensaries and travelling dressers	102,155	126,882	113,059	141,440
Cases treated by vaccinators	11,586	12,361	16,992	18,397
Cases treated by customs and police stations	945	945	1,047	1,048
Total	114,686	140,188	131,098	160,885

The number of females treated was 29.12% of the total.

Appendix F shows the number treated at the various dispensaries.

Three thousand five hundred and forty five patients (4,014) patients were visited in their homes by the dressers, The Assistant Medical Officer, Kuala Trengganu paid 832 (536) such visits while the Assistant Medical Officer, Kemaman paid 236 (during a period of six months).

Three hundred and sixty six (246) operations were performed at the dispensaries (excluding the Hospital Dispensary, Kuala Trengganu); these included three major operations performed by the Assistant Medical Officer at Kemaman. The Medical Officer also performed an emergency major operation at Bukit Besi, Dungun.

The Medical Officer is always in attendance at the Hospital Dispensary if required; he attends personally to calls from His Highness the Sultan and family, Europeans and some of the Asiatics while he is called into consultation by the other officers. Regular visits are paid by him to the towns and villages in the State and to the larger mines and estates. Last year, a visit was paid to Ulu Tebak (Kemaman), Ulu Paka, Ulu Jengal, Ulu Kelmin, Ulu Brang and Ulu Tersat while another visit was paid to Ulu Nerus and Ulu Telemong. Fifty-one nights were spent away from Kuala Trengganu on duty.

(C).—LABORATORY WORK.

(1).—Hospital Laboratory.

Blood.—Microscopical examinations for parasites numbered 3,170 (2,622) and 414 (454) were positive comprising:—

Plasmodium vivax	241
Plasmodium falciparum	167
Plasmodium malariae	31
Plasmodia vivax, falciparum & malariae	5
Plasmodia vivax & falciparum	9
Plasmodia viva*& malariae	9
Plasmodia falciparum & malariae	18
Filaria bancrofti (out of 21 examinations)	4
Differential counts of white blood cells	52 (40)
Total counts of white blood cells	66 (50)
Total counts of red blood cells	60 (42)
Widal Reaction.—Total performed	29 (31) from 22 patients
B. Typhosus positive	12
B. Paratyphosus A positive	0
B. Paratyphosus B positive	0
B. Paratyphosus C positive	0
Weil-Felix Reaction.—	
Total performed	30 (29) from 23 patients
Positive to B. proteus X 19 "K" strain	4
Positive to B. proteus X 19 "W" strain	2
Kahn Test.—	
Positive	9
Estimation of blood urea	1
Estimation of blood sugar	1
Gastric analysis	1
Sputum.—	
Microscopical examination for B. tuberculosis	431 (365)
Positive	44 (40)
Pus from urethra, cervix, conjunctiva, etc. for gonococci	204 (108)
Positive	114 (67)
Nasal and other smears for the lepra bacillus	34 (15)
Positive	10 (5)
Urine.—	
Chemical examinations (excluding routine examinations in wards)	562 (415)
Microscopical examinations	231 (297)
Estimation of urinary urea	1

Faeces.—2,883 (2,573) specimens were examined for ova and parasites. Multiple infections were frequent. The number of negative specimens was 769 (320) which is a higher proportion than has been noted in previous years. The following are the findings:—

Ankylostoma	46
Ascaris	332
Entamoeba coli	7
Entamoeba histolytica	19
Lamblia intestinalis	5
Oxyuris vermicularis	2
Pus & blood cells	164
Strongyloids	21

(1).—Hospital Laboratory Work.—(Contd.)

Taenia solium	..	..	..	..	..	1
Trichuris	..	..	..	..	..	180
Ankylostoma & ascaris	..	..	..	..	..	117
Ankylostoma, ascaris & blood cells	..	..	..	..	..	10
Ankylostoma, ascaris, entamoeba coli & trichuris	..	..	..	..	..	3
Ankylostoma, ascaris & lamblia	..	..	..	..	..	2
Ankylostoma, ascaris & trichuris	..	..	..	..	..	167
Ankylostoma & blood cells	..	..	..	..	..	14
Ankylostoma & entamoeba coli	..	..	..	..	..	4
Ankylostoma & lamblia	..	..	..	..	..	1
Ankylostoma & trichuris	..	..	..	..	..	40
Ascaris & lamblia	..	..	..	..	..	3
Ascaris, lamblia & trichuris	..	..	..	..	..	1
Ascaris & trichuris	..	..	..	..	..	967
Lamblia with blood & pus cells	..	..	..	..	..	6
Lamblia & trichuris	..	..	..	..	..	2

(2).—Out-Stations.

Blood.—594 (641) microscopical examination of the blood were made for parasites of which 147 (119) were positive:—

Plasmodium falciparum	..	..	..	..	..	79
Plasmodium vivax	..	..	..	..	..	64
Plasmodium malariae	..	..	..	..	..	3
Plasmodium falciparum & vivax	..	..	..	..	..	1
Negative	..	..	..	..	..	447

Sputum.—Out of 20 (44) specimens, examined for the tubercle bacillus, 9 (13) were positive.

Nasal and other smears for the lepra bacillus.—Eight (3) preparations were examined and 3 (1) were positive.

Urethral smears for gonococci.—28 (57) were examined and 14 (32) were positive.

Urine.—207 (231) microscopical and chemical examinations were made.

Faeces for ova and parasites.—Out of 734 specimens, only 171 (192) were negative and the findings were:—

Ankylostoma	..	..	..	..	..	25
Ascaris	..	..	..	..	..	254
Trichuris	..	..	..	..	..	6
Entamoeba histolytica	..	..	..	..	..	30
Ankylostoma & ascaris	..	..	..	..	..	49
Ankylostoma & trichuris	..	..	..	..	..	32
Ankylostoma, ascaris and trichuris	..	..	..	..	..	90
Ascaris & trichuris	..	..	..	..	..	63
Ascaris & pus cells	..	..	..	..	..	2
Blood and pus cells	..	..	..	..	..	12
Negative	..	..	..	..	..	171

VII.—PRISON HOSPITALS.

The only prison in the State is that at Kuala Trengganu where there is an eight-bedded ward for male prisoners. There is no hospital accommodation for women and if any of the few female prisoners fall seriously ill, they are sent to the Kuala Trengganu hospital for treatment; only one was sent during 1936.

In-patients.—There were 41 (54) admissions and there was one (0) death due to pneumonia. There was no out-break of infectious disease.

Out-patients.—The number of prisoners treated as out-patients was 550 (542).

N.B.—The daily average number of prisoners in 1936 was 78 (59).

VIII.—INSTITUTIONS FOR MENTAL DISEASES AND LEPROSY.

(A).—Mental Diseases.

There is no separate asylum for mentally deranged patients and they are confined in cells within the prison compound. An experienced attendant, who is also attached to the prison ward, looks after them while the Hospital Assistant visits every day and the Assistant Medical Officer once a week; the visits of the Medical Officer average once a fortnight. The prisoners are allowed out into the prison compound at times during the day and they are given light work if they are fit and willing. Cases that do not improve within a few months are sent to the Mental Hospital at Singapore. The number treated during the year was 67 (63) including 6 (10) females. The average daily number of mental patients was 14 (23). Many of these cases were under observation only.

The following are some details relating to these patients:—

	Males.	Females.	Total.
Remaining on 1. 1. 1936	21	3	24
Admitted	40	3	43
Total treated	61	6	67
Discharged	32	3	35
Transferred	11	1	12
Died	3	0	3
Remaining on 31.12.1936	15	2	17

The following table refers to the lunatics maintained at the Singapore Mental Hospital:—

	Males.	Females.	Total.
Remaining on 1. 1. 1936	4	3	7
Admitted	5	0	5
Total treated	9	3	12
Discharged	0	1	1
Died	1	0	1
Remaining on 31.12.1936	8	2	10

(B).—Lepers.

There is no leper asylum but there is a small ward of eight beds for males in the Hospital. The ward is usually full.

For four years, a register has been kept of all lepers who come to the notice of the Department pending future action for the control of the disease. It was revised during the year. The following table shows the number, sex and race of the patients remaining in the register:—

	Malays.	Chinese.	Indians.	Total.
Males	19	14	1	34
Females	14	1	0	15
Total	33	15	1	49

IX.—HEALTH OF THE EUROPEAN POPULATION AND ASIATIC OFFICIALS.

The total number of Europeans resident in the State at the end of the year was 37 (26).

The following table shows the sick, invaliding and death-rate of the European officials:—

Total number of officials resident	.. .. .	21
Average number of resident	.. .. .	12.6
Total number on sick list	.. .. .	12
Total number of days on sick list	.. .. .	53
Average daily number on sick list	.. .. .	0.14
Average number of days on sick list for each patient	.. .. .	4.4
Average sick time to each resident	.. .. .	4.2
Total number invalided	.. .. .	0
Total deaths	.. .. .	0
Number of cases of sickness contracted away from residence	.. .. .	1.

Asiatic Officials.—The total number of new cases treated was 5,086 (5,154) of which 2,224 (2,113) were members of the Police Force.

X.—METEOROLOGY.

Readings on the instruments kept at Kuala Trengganu Hospital show that:—

The highest temperature of 95°F was recorded on 12. 6. 1936.

The lowest temperature of 67°F was recorded on 18. 1. 1936.

The month with the highest rainfall was November with 34.93 inches.

The highest rainfall in 24 hours was 11.20 inches and this occurred on 17. 1. 1936.

The total rainfall for the year was 172.93 inches, a very wet year.

Rain gauges are also kept at the dispensaries at Kuala Dungun, Kampong Raja, Besut on the coast and Kuala Brang in the interior. The rainfall in the interior of the State, as estimated at Bukit Besi and Kuala Brang, is usually about 40 inches higher than on the coast. The wettest part of the year is the period of the north-east monsoon which falls between November and March and this greatly interferes with the travelling work of the dressers. The rainfall at Kuala Brang was 191.15 inches, that at Kampong Raja 159.89 and that at Kuala Dungun 166.95 inches.

XI.—VETERINARY.

There is no veterinary department in Trengganu and work of this nature falls on the Medical Department.

No epidemic of any importance occurred during the year. A few animals were treated during the year and the work included some minor operations. Pigs and cattle were examined at Kuala Trengganu and Kemaman prior to import and export.

The Veterinary Officer, Negri Sembilan paid a visit during the year and reported on veterinary conditions.

Legislation.—The following Proclamations (Ishtihar-ishtihar) were passed during the year:—

No. 52 of A. H. 1354 dated 13. 1. 1936 rescinded Ishtihar No. 15 of A. H. 1354 which prohibited the import of cattle, sheep, goats and pigs from Kedah, Siam and Perak.

No. 4 of A. H. 1354 dated 20. 4. 1936 prohibited the import of cattle from Siam while the permission of the Medical Officer is to be obtained before pigs, sheep and goats can be imported.

No. 18 of A. H. 1355 dated 8. 6. 1936, forbidding the export of cattle, pigs, sheep and goats from Johore, was rescinded by No. 25 of A. H. 1355 dated 10. 8. 1936.

No. 27 of A. H. 1355 prohibited absolutely the import of dogs from the Netherlands East Indies, Siam and the States of Kedah, Perlis and Kelantan except with the special permission of Government. Importers of dogs from other countries must produce a certificate from a Veterinary or Medical Officer to show that the dogs are free from disease and that the country of origin has been free from rabies for six months, provided that the Medical Officer can allow import if he knows that the country of origin has been free from rabies for over six months. Certain powers are also given to the State Secretary with regard to muzzling and vaccination orders.

G. I. H. BRAINE M.B., B.S., D.T.M. & H.

MEDICAL OFFICER,

APPENDIX A.

STAFF OF MEDICAL DEPARTMENT.**(1) DISTRIBUTION OF STAFF.**

The distribution of the staff at the end of the year was as follows:—

State—One Medical Officer, in charge.

1. Kuala Trengganu:—One Assistant Medical Officer (L.M.S.).

(a) General Hospital:—

- 1 Dresser in charge, grade I.
- 3 Dressers grade II (of whom one had passed grade I).
- 5 Dressers grade III (of whom two had passed grade II).
- 5 Probationer Dressers (of whom one had passed grade III).
- 1 Nurse grade III.
- 1 Midwife (holds certificate "B" of the Straits Settlements).
- 1 Steward and Storekeeper.
- 1 Assistant Storekeeper.
- 1 Clerk grade I.
- 2 Clerks grade III (one acts as Assistant Registrar, Births and Deaths).

(b) Town Dispensary and Welfare Centre:—

- 1 Dresser special grade (holds certificate of the Royal Sanitary Institute).
- 1 Dresser grade II.
- 1 Midwife (holds a Japanese midwifery certificate).

(The staff of the Town Dispensary also attends to the prisoners, the mental patients in the State Prison and the Police).

(c) Out-door and other duties:—

- 1 Sanitary Inspector (holds Diploma of the Royal Sanitary Institute).
- 1 Travelling Dresser (Probationer but had passed grade III).
- 1 Vaccinator.

2. Besut Dispensary at Kampong Raja:—

- 1 Dresser grade III.
- 1 Probationer Dresser for Travelling.
- 1 Midwife.
- 1 Vaccinator.

3. Setiu Dispensary at Kampong Panjang:—

- 1 Travelling Dresser grade III.

4. Kuala Brang Dispensary:—

- 1 Dresser grade III.
- 1 Vaccinator.

5. Dungun Dispensary at Kuala Dungun:—

- 1 Assistant Medical Officer (L. M. S.).
- 1 Dresser grade II.
- 1 Probationer Dresser for travelling.
- 1 Midwife (holds certificate "B" of the Straits Settlements).
- 1 Sanitary Inspector (holds Diploma of the Royal Sanitary Institute).
- 1 Vaccinator.

6. Kemasek Dispensary:—

1 Travelling Dresser grade III.

7. Kemaman Dispensary at Chukai:—

1 Assistant Medical Officer (L.M.S.).

1 Dresser grade II.

1 Probationer Dresser for travelling (Passed grade III).

1 Midwife (holds certificate "B" of the Straits Settlements).

1 Vaccinator.

In addition, one grade II Dresser was on leave. The menial staff comprises 29 males and 4 females.

(2) APPOINTMENTS.

The following appointments were made during the year:—

P. S. Raman, L. M. S., a graduate of Singapore, was appointed Assistant Medical Officer, Kemaman on 18/5/36.

Wong Boon Pin, L.M.S., a graduate of Singapore was appointed Assistant Medical Officer, Dungun on 18/5/36.

T. A. Menon, Hospital Assistant, was promoted to Dresser Special Grade on 1/1/36 as from 1/1/35.

F. F. Gomez was appointed grade III Dresser on 4/3/36.

Wee Hang Kang was appointed Probationer Dresser on 8/2/36.

Abu Mansor bin Hassan was appointed Probationer Dresser on 15/4/36.

Che Rose bin Abdullah was appointed Probationer Dresser on 3/6/36.

Miss Lim Yu Hiong was appointed midwife on 28/4/36 and promoted to Nurse grade III on 1/7/36.

Miss Teo Mee Choo was appointed midwife on 28/4/36.

Miss Devi Pillai was appointed midwife on 1/7/36.

These three ladies had been trained at the Kandang Kerbau Maternity Hospital, Singapore and hold the "B" certificate of the Straits Settlements Government.

Abraham Thomas was appointed Sanitary Inspector, Dungun on 21/3/36.

C. R. Deveraj, was appointed Sanitary Inspector, Kemaman on 29/8/36, but is now stationed at Kuala Trengganu.

(3) PROMOTIONS.

Mohamed Yusop bin Haji Ibrahim was promoted to grade II Dresser on 1/7/36.

Chua Swee Yeow was promoted to grade II Dresser on 1/7/36.

Musa bin Alias was promoted to grade III Dresser on 1/7/36.

Awang bin Hitam was promoted to grade III Dresser on 1/7/36.

Mohamed Darus bin Haji Bidin, promoted to vaccinator on 15/1/37.

(4) RESIGNATIONS.

There were no resignations or dismissals during the year.

(5) EXAMINATIONS.

The following were successful in passing their examinations in June:—

Grade III to grade II.—Chua Swee Yeow (average 71%); Che Yusop bin Haji Ibrahim.

Probationer Dresser to grade III.—Che' Musa bin Alias (average 79%); Che' Awang bin Hitam (special examination in Malay).

Miss Lim Yu Hiong passed the examination for grade III Nurses.

APPENDIX B.

STATE OF TRENGGANU.

Return for one year ending 31st December, 1936.

(Deaths grouped according to age, sex, and race.)

Deaths by Age Groups.	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	Total
0 ..	M	—	—	17	362	2	2	383
	F	—	—	8	253	1	—	262
4 weeks ..	M	—	—	18	229	—	1	248
	F	—	—	6	186	—	2	194
3 months ..	M	—	—	7	144	1	1	153
	F	—	—	10	104	—	1	115
6 months ..	M	—	—	3	85	—	—	88
	F	—	—	6	65	—	—	71
1 year ..	M	—	—	11	248	1	—	260
	F	—	—	6	258	1	—	265
5 years ..	M	—	—	5	115	—	—	120
	F	—	—	1	100	2	—	103
10 years ..	M	—	—	2	61	1	—	64
	F	—	—	2	26	—	—	28
15 years ..	M	—	—	1	46	—	—	47
	F	—	—	1	38	—	2	41
20 years ..	M	—	—	9	50	4	—	63
	F	—	—	3	57	—	—	60
25 years ..	M	—	—	21	64	3	—	88
	F	—	—	3	99	2	—	104
30 years ..	M	—	—	26	103	6	1	136
	F	—	—	4	120	—	—	124
35 years ..	M	—	—	23	57	9	2	91
	F	—	—	4	41	—	—	45
40 years ..	M	—	—	37	114	7	3	161
	F	—	—	6	94	—	2	102
45 years ..	M	—	—	17	46	3	—	66
	F	—	—	—	19	—	2	21
50 years ..	M	—	—	31	131	1	1	164
	F	—	—	3	123	—	—	126
55 years & Over	M	—	—	44	374	2	2	422
	F	—	—	6	461	1	—	468
Total Deaths ..	M	—	—	272	2229	40	13	} 4,683
	F	—	—	69	2044	7	9	
Births ..	M	—	—	250	3445	13	17	3,729
	F	—	—	198	3141	17	24	3,380
Total Births ..	M	—	—	250	3445	13	17	} 7,105
	F	—	—	198	3141	17	24	

APPENDIX C.

Health Statistics of Labour Population in Trengganu.

Name of Company	Average Monthly Number of Employees	Average Monthly Number of Dependents	Total Average Monthly Population	Deaths				Total Death Rate per Mille	Labourers.		Dependents.	
				Employees	Dependents	Total	Injury	Malaria	Total Number	Total Number of Days	Total Number	Total Number of Days
1 Nippon Mining Co., Dungun	1,982	767	2,749	34*	6	40	13	11	4,871	27,047	987	4,183
2 Ishihara Sangyo Koshi, Kemaman ..	621	84	705	2	0	2	1	1	683	3,410	148	845
3 Bundi Mining Co., Kamaman	460	330	790	7	0	7	2	1	1,135	1,951	330	522
4 Sungei Ayam Mining Co., Kemaman ..	194	24	218	8	0	8	0	0	302	1,963	6	31
5 Kajang Mining Co., Kemaman ..	178	52	230	3	1	4	1	1	400	1,621	38	57
6 Hin Leong Sawmill, Kemaman ..	77	20	97	1	0	1	1	0	26	327	0	0
7 Kretay Plantations, Kretay..	572	155	727	13	2	15	0	5	1,419	4,700	133	371
Total ..	4,084	1,432	5,516	68	9	77	18	19	8,836	41,019	1,642	6,009
Returns Received for the Periods Less Than One Year.												
8 Belawan Mine, Dungun (2 months) ..	53	3	56	0	0	0	0	0	14	32	0	0
9 Jerong Estate, Bukit Ajil (1 month) ..	40	8	48	0	0	0	0	0	0	0	0	0
10 Jabor Valley Estate, Jabor. (8 months) ..	887	182	1,069	14	9	23	1	0	Complete figures not available			

*Eight were killed in a riot. In addition to these, 6 labourers who claimed to work at this mine, died in the State Hospital, Kuala Trengganu.

APPENDIX D.

HOSPITAL, KUALA TRENGGANU.

Return of Diseases and Deaths (In-Patients) for the year 1936.

DISEASES.	Remaining in Hospital at end of 1935.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at end of 1936.
		Admissions.	Deaths.		
I.—Infectious and Parasitic Diseases.					
1. Typhoid fever	—	8	3	8	—
2. Paratyphoid fever	1	—	—	1	—
3. Typhus:—					
Tropical typhus	—	4	1	4	—
4. Relapsing fever	—	—	—	—	—
5. Undulant fever	—	—	—	—	—
6. Small-pox	—	—	—	—	—
7. Measles	1	—	—	1	—
8. Scarlet fever	—	—	—	—	—
9. Whooping cough	—	—	—	—	—
10. Diphtheria	—	—	—	—	—
11. Influenza:—					
(1) With pneumonia	—	1	—	1	1
(2) With other respiratory complications	—	15	—	15	—
(3) Without respiratory complications	1	89	—	90	4
12. Cholera	—	—	—	—	—
13. Dysentery:—					
(1) Amoebic	—	15	—	15	2
(2) Bacillary	—	1	—	1	—
(3) Undefined or due to other causes	—	18	3	18	1
14. Plague	—	—	—	—	—
15. Erysipelas	—	—	—	—	—
16. Acute poliomyelitis	—	1	—	1	—
17. Encephalitis lethargica	—	—	—	—	—
18. Cerebro-spinal fever	—	—	—	—	—
19. Glanders	—	—	—	—	—
20. Anthrax	—	—	—	—	—
21. Rabies	—	—	—	—	—
22. Tetanus:—					
(1) Tetanus of newly born	—	—	—	—	—
(2) Other form of tetanus	—	1	—	1	—
23. Tuberculosis of the respiratory system	9	49	21	58	6
24. Tuberculosis of the central nervous system	—	1	1	1	—
25. Tuberculosis of hip-joint	—	1	1	1	—
26. Leprosy	10	13	1	23	9
27. Syphilis:—					
(1) Primary	—	12	—	12	—
(2) Secondary	—	9	—	9	2
(3) Tertiary	—	14	1	14	—
(4) Hereditary	1	—	—	1	—
28. Other venereal diseases:—					
(1) Soft chancre	1	36	—	37	—
(2) Gonorrhoea and its com- plications	6	99	—	105	8
(3) Gonorrhoeal ophthalmia	—	4	—	4	1
(4) Gonorrhoeal arthritis	—	24	—	24	3
(5) Lympho-granuloma venereum	—	5	—	5	—
Carried forward ..	30	420	32	450	37

APPENDIX D.—(Contd.)

DISEASES.	Remaining in Hospital at end of 1935.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at end of 1936.
		Admissions.	Deaths.		
<i>Brought forward</i> ..	30	420	32	450	37
29. Purulent infective septicaemia:—					
(1) Septicaemia	—	2	2	2	—
(2) Pyaemia	—	2	1	2	—
30. Yellow fever	—	—	—	—	—
31. Malaria:—					
(1) Tertian	1	68	2	69	2
(2) Quartan	—	24	—	24	—
(3) Aestivo-autumnal (subtertian)	1	110	—	111	1
(4) Mixed infection	—	31	3	31	—
(5) Unclassified	10	149	—	159	5
(6) Cachexia	—	7	—	7	—
(7) Blackwater fever ..	—	—	—	—	—
32. Other diseases due to protozoa:—					
(1) Yaws (framboesia) ..	8	257	—	265	13
(2) Spirochaetosis ictero- haemorrhagica	—	—	—	—	—
33. Ankylostomiasis	—	63	1	63	5
34. Other diseases due to helminths:—					
Cestodes					
Taenia solium	—	2	—	2	—
Nematodes					
(1) Ascaris	1	191	1	192	5
(2) Filaria	—	4	1	4	—
35. Sprue	—	—	—	—	—
36. Other infectious or parasitic diseases:—					
(1) Rubella	—	—	—	—	—
(2) Varicella (chicken-pox) ..	—	2	—	2	—
(3) Mumps and its complications	—	2	—	2	—
(4) Dengue	—	2	—	2	—
(5) Melioidosis	—	—	—	—	—
II.—Cancer and Other Tumours.					
37. Sarcoma of maxilla	—	2	—	2	1
38. Sarcoma of naso-pharynx ..	—	1	—	1	1
39. Cancer or other malignant tumours of the digestive organs, and peritoneum:—					
(1) Oesophagus	—	1	1	1	—
(2) Others	—	4	—	4	—
40. Cancer or other malignant tumours of the male genito- urinary organs:—					
(1) Cancer of penis	1	—	1	1	—
(2) Sarcoma of testis	—	1	—	1	—
41. Tumours non-malignant:—					
(1) Of female genital organs ..	—	1	—	1	—
(2) Of other sites	—	22	—	22	—
<i>Carried forward</i> ..	52	1,368	45	1,420	70

APPENDIX D.—(Contd.)

DISEASES.	Remaining in Hospital at end of 1935.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at end of 1936.
		Admissions.	Deaths.		
<i>Brought forward</i>	52	1,368	45	1,420	70
III.—Rheumatism, Diseases of Nutrition and of Endocrine and other General Diseases.					
42. Rheumatic fever	—	—	—	—	—
43. Chronic rheumatism and osteo- arthritis	3	23	—	26	3
44. Diabetes (not including diabetes insipidus)	—	1	—	1	—
45. Scurvy including Barlow's diseases	—	—	—	—	—
46. Beri-beri including epidemic dropsy	9	135	9	144	9
47. Pellagra	—	—	—	—	—
IV.—Diseases of the Blood and Blood Forming Organs.					
48. Anaemia:—					
(1) Pernicious anaemia ..	—	1	—	1	—
(2) Secondary anaemia ..	—	15	—	15	2
V.—Chronic Poisoning.					
49. Chronic poisoning by other organic substances:—					
Opium addiction ..	1	—	—	1	—
50. Chronic poisoning by mineral substances:—					
Arsenical dermatitis ..	—	1	—	1	—
VI.—Diseases of the Nervous System and Sense Organs.					
51. Encephalitis (not including encephalitis lethargica):—					
Cerebral abscess ..	—	1	1	1	—
52. Meningitis (not including tuberculous meningitis or cerebro-spinal meningitis) ..	—	1	1	1	—
53. Other diseases of the spinal cord:—					
Transverse myelitis	—	1	—	1	1
54. Apoplexy and paralysis:—					
(1) Cerebral haemorrhage and paralysis	—	8	1	8	2
(2) Hemiplegia cause not determined	1	—	—	1	—
55. Insanity:—					
(1) Melancholia	—	1	—	1	—
(2) Others	—	3	—	3	—
56. Epilepsy (grand mal)	—	1	—	1	—
57. Infantile convulsions (age under five years)	—	1	—	1	—
<i>Carried forward</i> ..	66	1,561	57	1,627	87

APPENDIX D.—(Contd.)

DISEASES.	Remaining in Hospital at end of 1935.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at end of 1936.
		Admissions.	Deaths.		
<i>Brought forward</i> ..	66	1,561	57	1,627	87
58. Other diseases of the nervous system:—					
(1) Pseudo-hypertrophic muscular paralysis ..	—	1	—	1	—
(2) Facial paralysis ..	—	1	—	1	—
(3) Other forms of neuritis ..	—	1	—	1	—
(4) Paralysis agitans ..	—	2	—	2	—
(5) Disseminated sclerosis ..	—	1	—	1	—
(6) Neurasthenia ..	—	1	—	1	—
(7) Hysteria ..	—	2	—	2	—
59. Diseases of the eye:—					
(1) Conjunctivitis ..	—	14	—	14	1
(2) Other diseases of the eye ..	1	17	—	18	—
60. Diseases of the ear and or mastoid sinus:—					
Otitis media ..	—	5	—	5	—
VII.—Diseases of the Circulatory System.					
61. Chronic endocarditis: valvular disease:—					
(1) Mitral valve disease ..	—	1	1	1	—
(2) Others ..	—	2	—	2	—
62. Diseases of myocardium:—					
(1) Acute myocarditis ..	—	1	—	1	—
(2) Chronic myocardial degeneration ..	—	4	—	4	1
63. Arterio-sclerosis ..	—	1	1	1	—
64. Diseases of the veins:—					
Haemorrhoids ..	—	9	—	9	—
65. Diseases of the lymphatic system:—					
(1) Lymphangitis ..	—	1	—	1	—
(2) Lymphadenitis ..	1	2	—	3	—
VIII.—Diseases of the Respiratory System.					
66. Diseases of the nasal fossae and its annexa:—					
(1) Diseases of the nose; nasal polypus ..	—	2	—	2	2
(2) Diseases of the accessory nasal sinuses ..	—	1	—	1	—
67. Laryngitis ..	—	1	—	1	—
68. Bronchitis:—					
(1) Acute ..	—	2	—	2	—
(2) Chronic ..	1	42	—	43	2
69. Broncho-pneumonia ..	—	2	1	2	—
70. Lobar pneumonia ..	—	6	2	6	—
71. Pneumonia not otherwise defined ..	—	1	1	1	—
72. Pleurisy:—					
(1) Empyema ..	—	2	—	2	1
(2) Other pleurisy ..	—	6	1	6	—
73. Asthma ..	4	37	—	41	2
<i>Carried forward</i> ..	73	1,729	64	1,802	96

APPENDIX D.—(Contd.)

DISEASES.	Remaining in Hospital at end of 1935.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at end of 1936.
		Admissions.	Deaths.		
<i>Brought forward</i>	73	1,729	64	1,802	96
IX.—Diseases of the Digestive System.					
74. Diseases of the buccal cavity, pharynx etc:—					
(1) Pyorrhoea	—	7	—	7	—
(2) Dental caries	1	8	—	9	—
(3) Stomatitis	—	1	—	1	1
(4) Diseases of the tonsils ..	—	3	—	3	—
(5) Pharyngitis	—	1	—	1	—
75. Ulcer of the stomach or duodenum					
Ulcer of Stomach	—	1	—	1	1
76. Other diseases of the stomach ..	—	8	—	8	1
77. Diarrhoea and enteritis (under 2 years)	—	—	—	—	—
78. Diarrhoea and enteritis (over 2 years)	1	19	—	20	3
(1) Colitis	—	—	—	—	—
(2) Otherwise defined ..	—	—	—	—	—
79. Appendicitis	—	5	1	5	—
80. Hernia, Intestinal obstruction:—					
(1) Hernia	—	5	—	5	—
(2) Strangulated hernia ..	—	—	—	—	—
81. Constipation, intestinal stasis ..	—	6	—	6	—
82. Affections of the rectum & anus:—					
(1) Prolapse of rectum ..	—	2	—	2	—
(2) Others	1	4	—	5	—
83. Cirrhosis of the liver (non syphilitic):—					
(1) Alcoholic	—	—	—	—	—
(2) Not returned as alcoholic ..	—	8	2	8	—
84. Other diseases of the liver:—					
Hepatitis	—	2	—	2	—
85. Diseases of the gall bladder and ducts:—					
(1) Cholecystitis without record of calculi	—	1	—	1	—
(2) Catarrhal jaundice ..	—	4	—	4	1
X.—Diseases of the Genito Urinary System (Non Venereal).					
86. Acute nephritis	—	2	2	2	—
87. Chronic nephritis	3	11	4	14	—
88. Other diseases of the kidney and annexa	—	—	—	—	—
89. Calculi of the urinary passages:—					
(1) Calculi of the kidney and ureter	—	2	—	2	—
(2) Calculi of the bladder ..	—	1	—	1	—
90. Diseases of the bladder					
Cystitis	—	3	—	3	—
91. Diseases of the urethra:—					
Stricture	—	2	—	2	—
92. Diseases of the male genital organs:—					
Hydrocele	—	10	1	10	1
<i>Carried forward</i> ..	79	1,845	74	1,924	104

APPENDIX D.—(Contd.)

DISEASES.	Remaining in Hospital at end of 1935.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at end of 1936.
		Admissions.	Deaths.		
<i>Brought forward</i> ..	79	1,845	74	1,924	104
93. Diseases of the female genital organs:—					
(1) Amenorrhoea	—	1	—	1	—
(2) Menorrhagia	—	2	—	2	—
(3) Leucorrhoea	—	2	—	2	—
(4) Retroversion of the uterus ..	—	1	—	1	—
XI.—Conditions Arising in Preg- nancy, Childbirth and the Puerperal State.					
94. Ante-natal	—	7	—	7	—
95. Abortion	—	3	—	3	—
96. Conditions associated with labour:—					
(1) Normal labour	1	57	—	58	2
(2) Abnormal labour	—	5	—	5	—
(3) Accidents of childbirth	—	3	—	3	—
97. Retained placenta	—	1	—	1	—
98. Hyperemesis gravidarum	—	1	—	1	—
XII.—Diseases of the Skin and Cellular Tissues.					
99. Carbuncle, boils	—	14	—	14	2
100. Cellulitis, acute abscess:—					
(1) Cellulitis	2	7	1	9	1
(2) Acute abscess	1	50	—	51	—
(3) Gangrene	1	1	1	2	—
101. Elephantiasis	—	4	—	4	1
102. Ulcers	10	142	—	152	7
103. Dermal mycoses	—	23	—	23	—
104. Eczema	—	14	—	14	—
105. Herpes	—	2	—	2	—
106. Scabies	4	69	—	73	7
107. Urticaria	—	2	—	2	—
XIII.—Diseases of the Bones and Organs of Locomotion (other than Tuberculosis).					
108. Osteomyelitis	—	4	—	4	—
109. Arthritis	1	2	—	3	—
110. Bursitis	—	1	—	1	—
XIV.—Diseases of Early Infancy.					
111. Marasmus	—	1	—	1	—
112. Cryptorchidism	—	1	—	1	—
XV.—Conditions Associated with Old Age.					
113. Senility	1	2	1	3	1
<i>Carried forward</i> ..	100	2,267	77	2,367	125

APPENDIX D.—(Contd.)

DISEASES.	Remaining in Hospital at end of 1935.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at end of 1936.
		Admissions.	Deaths.		
<i>Brought forward</i>	100	2,267	77	2,367	125
XVI.—Affections Produced by External Causes.					
114. Suicide by drowning	—	1	1	1	—
115. Attacks by animals:— Goring, bites, kicks, etc. ..	—	5	1	5	—
116. Accidental burns:— (1) Burns by fire	—	1	—	1	—
(2) Scalds	—	2	2	—	—
117. Injury by cutting or piercing instruments	4	90	1	94	3
118. Injury by gunshot	—	1	—	1	—
119. Injury by dynamite	—	4	—	4	—
120. Injury by fall, crushing, etc:— (1) By fall	—	19	1	19	1
(2) By motor-car	—	7	—	7	—
121. Sprain	—	5	—	5	—
122. Fracture	3	18	—	21	3
123. Dislocation	—	1	—	1	—
124. Other external injuries	—	31	—	31	—
125. Fever unclassified	—	3	1	3	—
126. Persons accompanying patients ..	—	4	—	4	—
Total ..	107	2,459	82	2,566	132

N.B.—Of the above figures, 41 admissions and 1 death were at the Prison Hospital, Kuala Trengganu.

APPENDIX E.

Return of Operations in Hospital.

Pathological Condition and Nature of operations.	Total No. of cases.	Cured.	Relieved.	Died.
Operations on skin and subcutaneous tissues:—				
Cellulitis	3	3		
Suturing wounds	16	16		
Whitlow	3	3		
Skin grafting	1	1		
Removal of nail	2	2		
Sinuses scraped	2	2		
Removal of foreign body:—				
Buttock	1	1		
Hand	2	2		
Palm	1	1		
Ear	2	2		
Foot	3	3		
Eye	4	4		
Leg	2	2		
Operation on abdomen:—				
Paracentesis	20		20	
Abdominal abscess drained	2	2		
Laparotomy	1	1		
Stab wound of stomach	1			1
Operations for abscess:—				
Incisions	58	58		
Aspirations	4	4		
Operations on lips, mouths & salivary glands:—				
Plastic operations	1	1		
Alveolar abscess	1	1		
Extraction of teeth	230	230		
Operations on the male genital organs:—				
Ruptured urethra (intra-abdominal)	1			1
Dilatation of stricture	4	4		
Elephantiasis scrotum	1			1
Circumcisions	4	4		
Hydrocele radical cure	4	3		1
Hydrocele tapping	5		5	
Orchidectomy (sarcoma)	1	1		
Operations on tumours:—				
Fibroma	1	1		
Lipoma	3	3		
Peri-articular nodule	1	1		
Malignant tumour	1		1	
Others	3	3		
<i>Carried forward</i>	389	359	26	4

APPENDIX E.—(Continued).

Pathological Condition and Nature of operations.	Total No. of cases.	Cured.	Relieved.	Died.
<i>Brought forward</i> ..	389	359	26	4
Operations on lymphatic glands:—				
Incision of glands	9	9		
Operations on cysts:—				
Sebaceous	11	11		
Operations on ear:—				
Plastic	10	10		
Operations on muscles, tendons or ligaments:—				
Suture of tendons	2	2		
Amputations:—				
Wrist	1	1		
Phalanx of finger	1	1		
Operations on hernias:—				
Radical cure for inguinal hernia ..	1	1		
Operations on rectum and anus:—				
Excision of haemorrhoids	6	6		
Imperforate anus	2	2		
Sigmoidoscopy	4		4	
Prolapse of rectum	1	1		
Operations on joints:—				
Repair of shoulder joint	1	1		
Aspiration	2		2	
Reduction of dislocation	1	1		
Operations on the eye:—				
Pterygium	1	1		
Operations on female genital organs:—				
Perineo-recto-vaginal fistula	1	1		
Fistula of labium minus	1	1		
Perineorrhaphy	2	2		
Operations on nose and tissues:—				
Nasal polypus	3	3		
Total ..	449	413	32	4



APPENDIX F.

Details of Out-patients Treated at the Various Dispensaries.

DISPENSARIES.	1935				1936				New Cases Treated on Visits to Kampongs		
	Total New Patients	Total Attendances	Total New Cases Treated on Visits to Kampongs	New Cases		Total New Cases	Total Attendances	Males	Females	Total	
				Males	Females						
1. Kampong Raja, Besut	6,194	7,718	2,115	5,031	1,073	6,104	7,574	35	22	57	
2. Travelling Dresser, Besut	2,524	2,524	2,524	5,809	1,988	7,797	7,799	5,809	1,988	7,797	
3. Setiu Travelling Dresser	8,555	8,966	6,500	5,411	2,627	8,038	8,661	3,714	2,210	5,924	
4. Kuala Trengganu Town Dispensary & Clinic	19,234	30,520	0	14,472	4,941	19,413	31,762	0	0	0	
5. Kuala Trengganu Hospital Dispensary	7,557	9,485	0	5,694	1,881	7,575	9,506	0	0	0	
6. Kuala Trengganu Travelling Dresser	8,262	9,427	8,262	7,059	4,144	11,203	13,440	7,059	4,144	11,203	
7. Kuala Brang	18,730	19,226	14,728	10,640	5,745	16,385	16,911	6,810	4,246	11,056	
8. Kuala Dungun	8,514	10,379	2,811	4,914	1,388	6,302	7,737	36	19	55	
9. Kuala Dungun Travelling Dresser	2,549	3,075	2,549	3,477	1,964	5,441	5,868	3,477	1,964	5,441	
10. Kemasik Travelling Dresser	3,666	4,352	1,686	3,852	1,114	4,966	5,868	2,097	661	2,758	
11. Kemaman	12,307	16,684	5,061	5,332	1,315	6,647	10,233	0	0	0	
12. Kemaman Travelling Dresser (Included in figures above)				5,082	1,837	6,919	9,380	5,082	1,837	6,919	
13. Kampong Buloh (P.W.D.)	4,063	4,526	2,294	4,973	1,296	6,269	6,701	3,379	756	4,135	
14. Vaccinators	11,586	12,361	11,586	10,377	6,615	16,992	18,397	10,377	6,615	16,992	
15. Police, Customs, etc.	945	945	945	797	250	1,047	1,048	797	250	1,047	
	114,686	140,188	60,061	92,920	38,178	131,098	160,885	48,672	24,712	73,384	

